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ABSTRACT

A need for better understanding between industry and education prompted development of a program to employ eight teachers in industry on a full-time basis during the summer to broaden the teachers' understanding of the nature and scope of the industrial process. Weekly seminars were held in which the teachers shared their experiences with each other and with the company's executive staff. Each teacher agreed to also enroll in a graduate course in career education for each of two consecutive semesters following the summer internship, the purpose being to examine the activities conducted over the summer and develop subsequent programs and curriculum materials to apply in each teacher's home high school. Company employees and management trainees also enrolled in the courses, producing a continuing exchange between educators and industrialists. Two evaluation instruments were designed and pre- and posttests were administered to four different employee groups (the eight teachers were one of the four groups) to establish the attitude of the groups regarding free enterprise and to test their knowledge of how our economic system functions. Results showed only minimal changes in the attitude and knowledge among the groups, but the data revealed that the teachers did not have the negative attitude about business and industry that is often perceived by the business world. As a whole the results of the project were encouraging and plans were made to design and implement future programs that will foster positive business-school-community cooperation. (BL)

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1977 TEACHER INTERN PROJECT

FINAL REPORT

RAYTHEON DATA SYSTEMS COMPANY
Norwood, Massachusetts

BEST COPY AVAILABLE

Prepared by:

Dr. Harold S. Resnick
Project Consultant

and

Associate Professor
Department of Business and
Career Education
School of Education
Boston University

December, 1977

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PREFACE

The Raytheon Data Systems Company Summer Teacher Intern Program grew out of a need expressed by J. Thomas Markley, president of RDS, J. Fred McLimore, Dean of External Affairs for the Krannert Graduate School of Management at Purdue University, and Harold S. Resnick, Associate Professor of Business and Career Education, School of Education, Boston University. The need addressed was that of fostering a better understanding and relationship between industry and education. The hope was for the development of programs that would ultimately help youth in school learn about, understand, and succeed in the difficult transition from school to work.

The initial programmatic expression of this need was addressed through a teacher intern program conducted during the summer of 1977. This was followed by a graduate course conducted through the Department of Business and Career Education at Boston University, and was designed to explore further areas of mutual interest and need from which further programmatic elements might be developed.

This report provides Project information including the the need; a description of the goals and programs of public high schools as they are presently organized; the personnel needs of American business; the summer teacher intern program; the results of research completed regarding this program; and future plans. The appendixes include the research instruments used in the data-gathering component, and the syllabus for the Fall, 1977 course.

Many individuals were responsible for the successful launching of this undertaking. J. Thomas, Markley, president, Raytheon Data Systems made the entire project possible through both his philosophical and fiscal support. Fred McLimore of Purdue University provided much valuable input in the design stages and continues to render valuable insight as the program continues to unfold. The Industrial Relations Department, under the direction of Larry Mayer and with the help of Milt Gray provided the original home for the project, and endorsed its implementation. The Training and Development Department, managed by John Larney and with the able assistance of Charles Levine, continue to provide ongoing support of the activities of this program.

The School of Education, Boston University, is acknowledged for its contribution to the project, and for including the graduate course as an integral part of its extension program. David C. Gardner, chairman of the Department of Business and Career Education is to be especially noted for his continuous support of the project, and for embracing it within the boundaries of that Department's thrust.

Appreciation is extended also to the participating educators and school systems, as well as all the guest speakers cited in the course syllabus, for their involvement in this program.

Harold S. Resnick, Ed.D.
Project Consultant

TABLE OF CONTENTS

Introduction.....1

The Public Schools.....6

Personnel Needs of American Business.....12

A Teacher Intern Program.....17

Program Description.....19

The Research Component.....22

Interpretations.....31

Future Plans.....33

Appendix A: Research Instruments.....37

Appendix B: Fall 1977 Course Syllabus.....43

LIST OF TABLES

Figure 1: Labor Market - Availability vs. Growth.....3

Figure 2: The Relationship of School Goals and the Personnel Needs of Business and Industry.....16

Figure 3: Sample Attitude Scale.....25

Figure 4: Sematic Differential (Attitude) Measures Pre and Posttest Scores by Group.....28

Figure 5: Economic Literacy (Knowledge) Measures Pre and Porsttest Scores by Group.....29

1977 TEACHER INTERN PROGRAM

FINAL REPORT

Introduction

Organizational development has become an area of increasing concern among business and corporate enterprises in recent years. The complexities of the interdependencies of many aspects of the work environment, and the demand for skilled personnel in both technical and managerial capacities continues to increase. Each business must address these needs by expanding the traditional roles of its training department, and develop new and creative vehicles for equipping personnel at all levels for new and expanding corporate roles, responsibilities, and functions.

Many components of the training and personnel development model have long-standing heritages. The use of graduate schools of business and management as a training vehicle and employment source for personnel with executive potential is an accepted and established practice. And yet, recent research dispels the myth that the completion of a graduate program in management is the key to corporate success.[1] Similarly, the public schools have failed also in many respects to provide employees with the initial training and

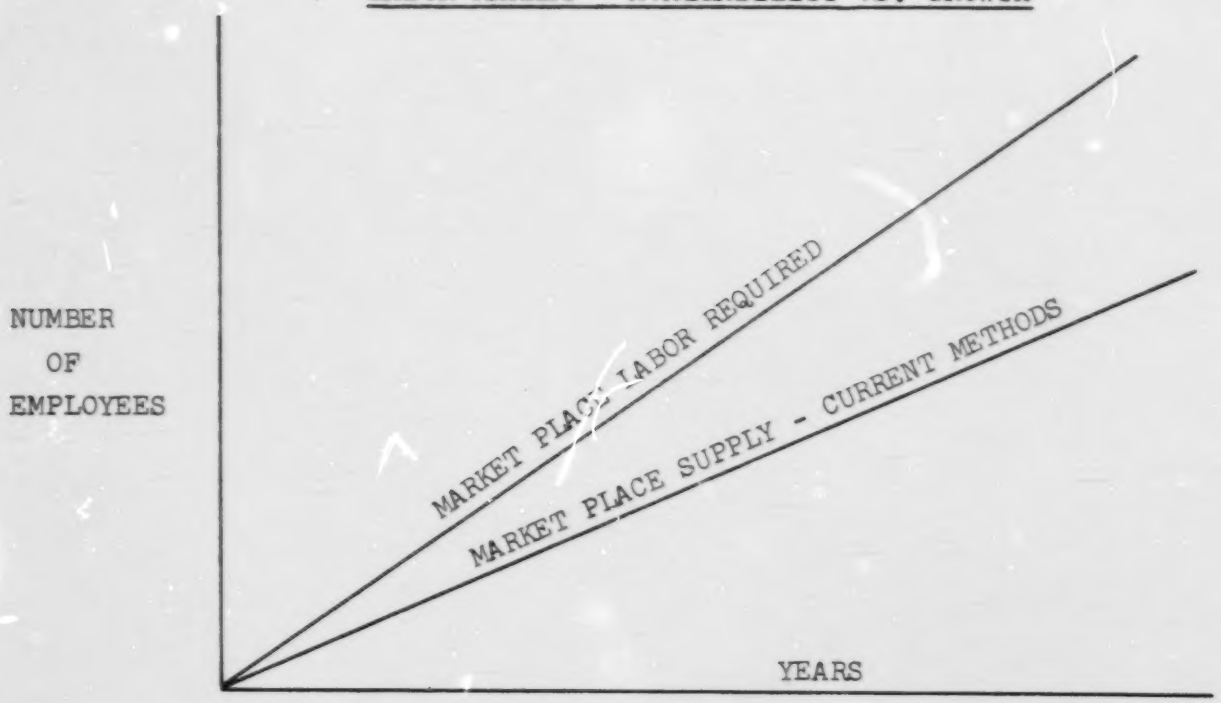
skills required for adjustment, growth and development within the business environment. A third consideration now becoming manifest in large businesses is expressed by disaffection and an unwillingness of many current employees to accept the values, demands, and responsibilities required of the corporate lifestyle. An increasing number of individuals are rejecting these demands and opting for alternative career paths-indeed, alternative lifestyles-more in keeping with their needs.

Business and industry faces the continuing and ongoing difficulty of identifying individuals with management potential, placing and training them, keeping them within the enterprise, and providing continuing opportunities for professional advancement and personal job satisfaction. The problem is even more acute for those industries in which the demand for key personnel far outstrips the supply.

Figure 1 illustrates part of this dilemma, in which resources of available personnel fall far short of anticipated corporate growth for the Raytheon Data Systems Company, Norwood, Massachusetts. In fact, the trend depicted in this figure indicates that the problem will become even more acute over the next several years. Consequently, expanded models of organizational development must be established to achieve a number of objectives. One such objective is

FIGURE 1[2]

LABOR MARKET - AVAILABILITY VS. GROWTH



the continued upgrading of existing personnel to meet ongoing needs within the organization, so they may continue to function effectively in expanding job roles. A second goal of organizational development is the upgrading of personnel for newly established roles within the corporate structure. A third role currently emerging includes the development of those human relations skills essential for effective management. Other roles and functions unique to particular companies and industries may also be found. Some of these include personnel functions, secretarial skills training,

technical training, vendor and/or customer training, and the like.

Various models for organizational development programs may be found. Some address several of the functions cited above. Others include these, and incorporate also other roles and functions. One consistent pattern, however, is that most organizational development programs work primarily with individuals already employed by the company. The programs themselves may involve outside resources such as institutions of higher education. The recipients of the programs, however, are typically individuals who have already been employed within the company. These programs will do much to maintain the vitality and flexibility of the corporation, as well as prepare personnel for new and expanding roles and responsibilities. They will not, however, solve the problem addressed in Figure 1: the need for an enlarged pool of capable personnel not currently employed by the organization.

This issue was addressed by J. Thomas Markley, President of the Raytheon Data Systems Company (RDS) in Norwood, Massachusetts. Three concepts led to a desire by this company to form a partnership with the public school systems in its surrounding communities. The first of these concepts was the realization that the public school systems con-

stitute a valuable pool of clerical, technical, and manufacturing personnel. Many secondary school graduates, however, lack both the skills and attitudes (work ethic) necessary for a successful employment experience.

The second concept expressed by RDS was a concern that the free enterprise system, as the underpinning of a democratic society, is not studied, understood, or critically analyzed by teachers and students within public schools. The third concept was the expression of social responsibility by RDS to contribute to the public educational system and develop a compatible work environment that would maximize the potential for the fulfillment of each individual employee. This expression of social concern related to schools and employee satisfaction is not unique to Raytheon. In fact, a recent survey reported by Brenner and Molander indicate a strong feeling of obligation by businessmen to "use every means possible to maximize the job content and satisfaction for the hourly worker."[3]

The outcome of these concerns led to programs that would establish ongoing relationships with surrounding school systems. Furthermore, these programs were designed to become an integral part of the company's organizational development program. The philosophy and design of the particular programs were developed from the current career educa-

tion movement in the public schools -- a movement dedicated to the concept that all students should leave school prepared both for further education and for a productive role in society. This concept includes the development of a personal set of values within each student in which the individual's positive expression of his self-concept may be incorporated within a personal work ethic that contributes to our productive society.

The establishment of school-business-industry collaborative programs do indeed meet the needs of both the schools and of American business and industry. It is necessary, however, to examine the goals and structure of both these institutions to show clearly just how compatible these programs must be to achieve their objectives. The program subsequently described may then serve as but one example of joint efforts between business, industry, and the public schools for the optimal development of the most valuable resource in this country: our human potential.

The Public Schools

Many statements can be found that describe the goals and major purposes of American schools today. Most of these, however, focus about a central concern to prepare each individual for life. The author's goal statement is "to prepare each individual to become an autonomous, self-

actualized person, both capable and desirous of functioning in and contributing to our productive society."

An examination of secondary school curricula and materials reveals several strands, or patterns, of goals and organizational structures. One of these is the standard content orientation. There is indeed concern that appropriate attention be given to the subject fields of math, science, English, social studies, etc. These bodies of knowledge form the core of the organizational structure of the school.

In addition to this content orientation, however, are concerns for the development of process-oriented skills that transcend any given content area. Some of these skills may be identified and taught directly through the content areas. Skills in the arena of goal-setting, problem-solving and decision-making are such examples. Other skills are more developmental in nature, occur over time, and require the careful planning of instructional strategies infused in the school curriculum. The developmental skill of helping the student progress from a dependent person to a more independent, autonomous human being is such an example.

A third set of concerns affecting the curriculum are those addressing morals and values. These too, whether in

a purposeful or hidden manner, impact upon the design and implementation of instructional programs in the schools. Many of the issues and concerns regarding moral development in the schools have developed in recent years from the growth of the mental health field. The development of a positive self-concept, and the individual's ability to adjust and function in a multiplicity of environments is increasingly critical in a more pluralistic, technologically advanced society. The sociology of human interaction in a wide variety of settings, including the workplace, has become manifested in the curriculum through such activities as values clarification activities, T groups, sensitivity and awareness programs, and the like.

Thus, in achieving its goal of preparing individuals for life, the schools must address the issues of basic content skills (such as English and math); basic process skills (such as problem-solving and decision-making); developmental skills (such as personal independence and lifestyle selection); and human relations skills (such as working with others, appreciating the values of unique cultures, etc.).

Clearly, such a curriculum requires a sophisticated delivery system with a wide array of resources and capabilities. The capabilities to deliver this program form the core of the school's identified needs to meet its goal of

producing individuals ready to function productively in their personal, moral, social, occupational, and political roles.

One must realize also that the graduates of schools today are different in other respects, simply because society had changed so drastically. William Glasser describes this change as the evolution from a "goal-oriented society" to that of a "role-oriented society."[4] In the goal-oriented society, the individual accepted the goals set by society, and modified his behavior appropriately to achieve them. The primary accomplishments in life were those valued by society at large, and each individual accepted the demands placed upon him to attain those goals. Of prime importance were the attainment of high status occupations, the acquisition of conspicuous symbols of affluence and "success", and the material trappings that accompanied this lifestyle.

Time and society, however, have changed that model. Youth of today are role oriented -- that is, they first seek out their own role and lifestyle, and then establish for themselves the objectives and activities that will allow them personal fulfillment within their chosen lifestyles. Glasser believes that this development in our society has been caused by three factors: affluence, the human rights

movement, and the media. The general affluence of our society has eliminated the need to continue the struggle for survival. A common economic base established by welfare, social security, unemployment insurance, and other social programs virtually guarantees that individuals will not be allowed to fall below a base level of existence. This assurance allows for greater freedom and flexibility in establishing career paths and lifestyles. The human rights movement, which has increased in momentum over the past several decades and is now a high personal priority of the President of the United States, encourages each person to recognize his own personal worth and value. This, too, has contributed to the emphasis placed upon the development of the self rather than the placement of oneself in a role subservient to the organization. The third factor is the growth of television, with its omniscient programming encouraging each of us to experience more out of life.

The development of the role-oriented individual, a society with greater concern for individual human rights and expression, and a more sophisticated high school curriculum addressing roles, responsibilities, process skills, values, and human relations skills in addition to basic content and knowledge acquisition, has resulted in greater expectations and demands by the high school graduate. These

demands address both society in general, and every employing institution. Work for the role-oriented individual, therefore, must meet needs for self-expression, personal pleasure, a sense of involvement with others at work, and the opportunity for the expression of personal self-esteem through work.

It is this complex educational model concerned with the development of skills, responsibilities, and values interfacing with society that led to the career education movement. Career education, then, is "the total effort of public education and the community to help all individuals become familiar with the values of a work-oriented society and to integrate these values into their personal lives in such a way that work becomes, possible, meaningful, and satisfying to each individual."[5] This requires that career education programs achieve the following four goals:

1. To prepare each individual for life after school both in terms of preparation for further education and for entry into the world of work.

2. To help each student develop a personally meaningful value structure that incorporates a work ethic and readiness to contribute to our society in a productive capacity.

3. To provide each individual with the skills and

maturity needed to function, continue to grow, achieve self-actualization, and maximize his human potential.

4. To help each individual develop a life's work that is compatible and congruent with his occupational career path.

The attainment of these goals for students through the public schools will better prepare youth for work. The following section re-examines this development of human potential from the perspective of business and industry.

Personnel Needs of American Business

The largest budgetary component of most industries is personnel. Human resources comprise approximately 80% of most budgets. Even in capital intensive industries, salaries and wages comprise the single largest component of the corporate budget. Clearly, therefore, the identification, employment, maintenance, development, and advancement of valuable human resources must be a primary corporate concern.

A survey of several companies in the Boston area revealed that the employment of each salaried individual costs the average company between $5000 and $7000, exclusive of salary costs and training time for the new employee. These costs are derived from such areas as interviewing expenses, travel, moving costs, personnel support costs, initial benefits, severance of former employees, etc. Surely, then,

any program that will help identify and prepare personnel, and reduce "turnover" will be of direct and immediate cost savings, as well as contribute to the longer term human resource benefits cited previously.

A further study of this issue indicates that nine of ten employees terminated for reasons other than production layoffs are not terminated for their technical inability, or incompetence, to perform their job. Rather, they are terminated for issues generally classified as "poor attitude." This term is typically further defined as one of the following: inability to get along with co-workers or supervisors; lack of flexibility to adapt and adjust to changing work situations and demands; lack of creativity in solving work-related problems; or other similar reasons.

It is clear that a great part of the human resources of many companies are not utilized to their potential. The process of employing individuals is costly, and the reasons for their termination often relate to issues other than the competence specified in job descriptions. A more detailed analysis of the skills required of corporate employees, therefore, is in order.

Discussions with personnel officers and several corporate executives, coupled with a review of the literature, reveal that three sets of skills form the basis for personnel

employment and job success conditions. One of these skill areas comprises the technical skills required to perform a particular job. High level math and science skills are indeed crucial for an engineer, as one example.

A second set of skills, however, is less well-defined but of greater importance to many employers. This set is termed "human relations skills" and refers to the individual's ability to work with others in a multiplicity of environments. It calls for an understanding and sensitivity to the needs of fellow workers within a variety of social settings, and the ability to adjust and adapt rapidly to varying work conditions. An accepting, pluralistic, open frame of reference is required for the maintenance of positive human relations in what is often a tense, and demanding work environment.

The third set of skills is loosely termed by employers as a "positive attitude." Further analysis reveals several ingredients manifested within this concept. The first of these is the demonstration of a strong, positive self-concept, or sense of self. The individual who is secure in the knowledge of his capabilities, interests, worth, limitations, etc. projects a positive image to the world. This is evidenced as a "positive attitude" toward work. This positive attitude is reflected also in the individual's willingness to work with others, accept new work tasks, and grow and develop in new and difficult situations.

Business and industry, therefore, seeks individuals with good technical skills, the ability to work well with others in many situations (human relations), and persons with a positive attitude about themselves and the world around them (self-concept).

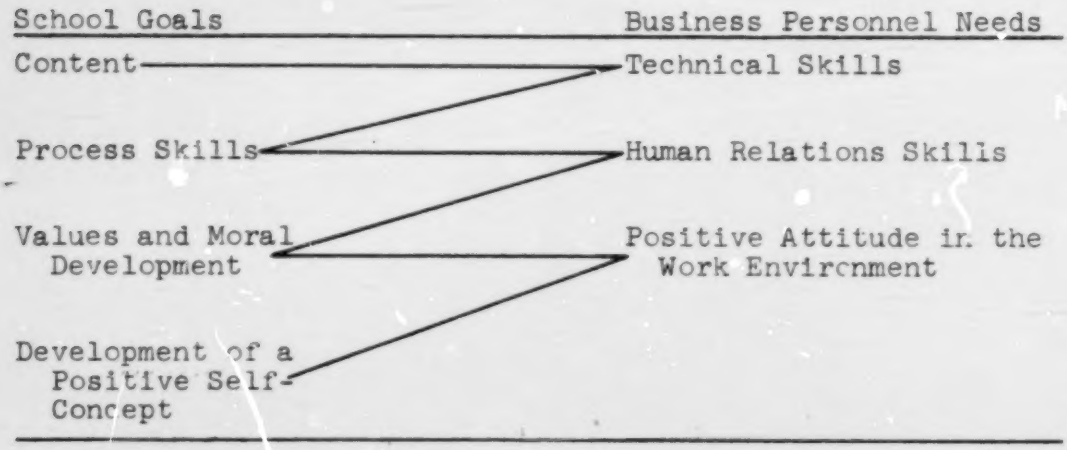
It takes but a brief analysis to see that the educational and developmental goals of education are both consistent and frequently congruent with the needs of business and industry. Content skills in education become technical skills in the workplace. Process skills such as problem-solving developed in schools become management skills in industry, both in a personal and group environment. Developmental skills are manifested in a positive self-concept, and a positive attitude or outlook on life. And, moral development in education forms the core of positive human relations, perhaps the most crucial ingredient sought today by the economic sector.

Figure 2 graphically shows the relationship of the goals of education to those of business and industry.

Based upon these mutual concerns, it may be seen that business, industry, and the schools all benefit through the formation of a true "partnership" dedicated to the optimal development of our human potential. Clearly, this objective would be accomplished to a larger degree if the resources of

FIGURE 2

THE RELATIONSHIP OF SCHOOL GOALS AND THE PERSONNEL NEEDS OF BUSINESS AND INDUSTRY



these respective institutions were joined to function in a mutually supportive manner. Yet, the current typical pattern tends to be one of mutual distrust, or at best, mutual ignorance. Business and industry typically perceives the educational world as an environment in which little, if any attention is given to the preparation of the individual for his/her role in society after school. Educators, on the other hand, perceive employers as being concerned only with their immediate manpower needs, with little if any concern for the development of the whole human being.

Recently, these institutions have begun to work together, and better understand each other. The current career

education movement has stimulated much interest by educators in preparing students for their many roles in life after leaving the educational system. Business and industry, too, have recognized their vital role in working with educational systems for the continued growth and development of our society. The program described in this article was designed to foster this mutual understanding and support.

A Teacher Intern Program

Many models and programs could be established to foster positive relationships and understandings between the educational and economic sectors of society. As one initial thrust, a cooperative venture was mounted between the Department of Business and Career Education, School of Education, Boston University, and the Raytheon Data Systems Company, Norwood, Massachusetts. The decision was made to direct this initial effort at teachers, rather than students, for several reasons. First, teachers are the "building blocks" and foundation of the school program. Commitment on their part is essential for the successful implementation of any school-based programs. Secondly, it was believed that each teacher could relate this project to other teachers, as well as a large number of students, thereby maximizing the impact of the program and leading to the establishment of other related programs in their school systems. The goals

of this program were as follows.

1. To establish an ongoing vehicle for effective communications and mutual support between educators, business and industrial leaders, and labor representatives. To translate this communication into mutual interaction and involvement in the educational process both in schools and in the workplace.

2. To develop an understanding of work among the teachers, including an analysis of the sociology of varied types of work, and the economic conditions and requirements to sustain a free enterprise economy. To develop further an understanding of the nature of differing types of work, opportunities, requirements, industrial organizations, etc.

3. From goals one and two, to develop programs and activities for infusion in school curriculums. These programs will use the resources of business and industry to help students develop a better sense of self, and an understanding of its application to the world of work in such a manner that work will be both personally more meaningful to the individual and more productive to the work environment.

4. To bring together the goals of the schools and those of the economic sector in such a manner that the optimal development of each individual student results also in

a more satisfied, productive employee. To help each individual develop so that his/her life's work may be consistent with a productive economy.

Program Description

During a series of early meetings in the Spring, 1977, concern was expressed that many youngsters leaving school and entering the world of work were doing so without a strong sense of self; with limited knowledge of the opportunities and requirements needed to function as a productive member of the work force; and with little understanding of the relationship between their own goals, interests, values, aptitudes, and capabilities and the opportunities available in the business/industrial/labor community. It was determined further that school programs could be developed to help address this issue. The ultimate outcome would serve all interested parties. Business and industry would receive employees with a better sense of their chosen work roles, and the opportunity to implement these work roles for personal self-fulfillment. The students themselves would be better equipped to function in society and self-actualize their lives through work. And, the schools would be better able to meet their goal of preparing students for life.

It was determined that a critical ingredient in this process would be the development of curricula and instructional

systems to be used by school personnel in achieving these objectives. Yet, many teachers are ill-equipped to prepare and deliver these materials, since their own personal experience in the world of work (outside the field of education) is often quite limited. Consequently, Raytheon decided to employ eight teachers on a full-time basis during the summer of 1977 in the Raytheon Data Systems Company. The purpose of this employment was to broaden the teachers' understanding of the nature and scope of the industrial process. While employed, the teachers made a positive contribution to the company's production, and received a regular, full-time salary, paid by Raytheon.

The teachers' job placement in the various areas of RDS was based upon their own backgrounds. For example, a counselor was placed in the personnel and employee relations department; a business education teacher, in accounting; a science teacher, in engineering and product development; etc.

To ensure that each teacher received also a full breadth exposure to all facets of the company, weekly seminars were held in which the teachers shared their experiences with each other. In addition, a different senior executive representing a particular phase of the company's functions met with the teachers each week to explain his/her phase of production. Through this experience, the teachers acquired both

an understanding of, and first-hand experience in, industry. The industrial employees similarly gained a broader understanding of the perspectives, opportunities, and limitations within which the teachers function during the school year.

As part of their conditions of employment, each teacher agreed to enroll in a graduate course in career education for each of two consecutive semesters, following the summer internship experience. These courses were offered by the School of Education, Boston University. The purpose of the courses was to examine the activities conducted over the summer, and develop subsequent programs and curriculum materials to apply in each teacher's home high school. A variety of guest speakers representing various perspectives and programs shared their activities with the class. These guest speakers came from both the educational and industrial sectors of the community. In addition to the teachers, interested employees and management trainees of the Raytheon Company also enrolled in the courses. This produced a continuing exchange of ideas between educators and industrialists. The courses were physically offered in the Raytheon Training Center, to maintain liaison between the school systems and industry.

Involvement in this project required also a system-wide commitment by each participating school district. One

of the criteria for a teacher to be eligible for participation in this project, was an "a priori" agreement by the school system to allow the teacher the opportunity to implement programs developed from these experiences and seminars.

The benefits of this project, therefore, are fivefold. The teachers gained broader experiences about the world of work through positive, paid, carefully developed internships in industry. Raytheon gained both from the services of the teachers in the summer and from the future benefits of their students who will hopefully enter the world of work better equipped to function in it. The school system gained through the staff development of teachers with a broader range of experiences to offer their students, and additional curriculum approaches to use in their schools. The university had the opportunity to promulgate career education and bring together various facets of the community. The high school students will enjoy the benefits of additional curriculum materials and teachers better able to help them prepare for the transition from school to work.

The Research Component

To assess the effectiveness of various aspects of this program, data was gethered from several groups both before and after the summer program. Several research

questions were asked. The first of these was designed to establish the attitude of various groups regarding free enterprise and private corporations. The second question related to the knowledge of these same groups regarding basic facts of how our economic system functions.

Four groups were identified for this assessment. The first of these groups was a randomly selected number of regular Raytheon employees who had been working for the company for more than six months. They represented an extensive range of employees from hourly rate assemblers to several vice-presidents. The scores from this group served as the base line scores to which the other groups were compared.

The second group tested were the eight teachers who participated in the summer project. The third group consisted of four newly employed management trainees embarking upon their first career path, immediately from undergraduate programs in business administration. The fourth group was comprised of college students employed by Raytheon during the summer months to fill positions for individuals on vacation. All these college students were children of regular Raytheon employees. This summer program was designed to help them earn necessary tuition funds for the ensuing year.

Two instruments were designed and administered. The attitude measure was a modification of the semantic differ-

ential instrument, in which the respondents were asked to scale their personal values regarding four concept words. The four concept words were: free enterprise; capitalism; profit-making corporations; and private business and industry. Figure 3 provides a sample of the structure of this instrument.[6]

The second instrument used was a knowledge test of economic literacy developed by several professors of economics at Purdue University, and shared with the project by J. Fred McLimore, Associate Dean for External Affairs, Krannert Graduate School of Management at Purdue. This test combined true-false and multiple choice tests to measure each participant's knowledge regarding a free enterprise economy.

All four groups were given these two tests in the first week of July, 1977. The project was then conducted over the summer and the tests were administered again to the teachers, management trainees, and college students at the end of August. The Raytheon employees did not retake the test, since their scores were used as the base line and they were not part of, or involved in, the summer project in any way.

The first question to be answered was whether the tests themselves were reliable and internally consistent. The semantic differential (attitude test) showed a high in-

FIGURE 3

SAMPLE ATTITUDE SCALE

INSTRUCTIONS

The scale on this page and on the following pages is designed to measure your attitude, or how you feel about the four words, or concepts of free enterprise, capitalism, profit-making corporations, and private business and industry. Place an X in the parenthesis ( ) that most closely expresses how you feel about the word or phrase listed, when placed along pairs of words shown. Each concept is followed by 15 pairs of words.

Since this is an expression of feelings, there are no right or wrong responses. Each response simply indicates your point of view.

Only group responses will be presented. The anonymity of all individuals responding will be protected.

Thank you very much for your cooperation.

FREE ENTERPRISE

good ( ) ( ) ( ) ( ) ( ) ( ) ( ) bad

ugly ( ) ( ) ( ) ( ) ( ) ( ) ( ) beautiful

unimportant ( ) ( ) ( ) ( ) ( ) ( ) ( ) important

hard ( ) ( ) ( ) ( ) ( ) ( ) ( ) soft

strong ( ) ( ) ( ) ( ) ( ) ( ) ( ) weak

feminine ( ) ( ) ( ) ( ) ( ) ( ) ( ) masculine

active ( ) ( ) ( ) ( ) ( ) ( ) ( ) passive

slow ( ) ( ) ( ) ( ) ( ) ( ) ( ) fast

worthless ( ) ( ) ( ) ( ) ( ) ( ) ( ) valuable

relevant ( ) ( ) ( ) ( ) ( ) ( ) ( ) irrelevant

irresponsible ( ) ( ) ( ) ( ) ( ) ( ) ( ) responsible

necessary ( ) ( ) ( ) ( ) ( ) ( ) ( ) useless

authoritarian ( ) ( ) ( ) ( ) ( ) ( ) ( ) democratic

permissive ( ) ( ) ( ) ( ) ( ) ( ) ( ) restrictive

approach ( ) ( ) ( ) ( ) ( ) ( ) ( ) avoid

ternal consistency, with coefficients for sub-tests varying from .82 to .87, and an overall .94 coefficient. The cognitive measurements fell well short of this. The true-false section was .65 and the multiple choice was .77. When combined, however, they reached an acceptable .84.

Factor analysis revealed several results. First, the four concept words on the semantic differential functioned as one factor. That is, the individual respondents tended to view them as synonymous terms, and an individual's response to any one of these terms was predictive of his response to the other terms. Therefore, in future use, one of these words could be used instead of all four terms.

Further factor analysis showed the semantic differential (attitude) and the economic literacy (knowledge) tests to be measuring two distinct, different dimensions. Therefore, despite the fact that there were significant correlations among these subtests, a single composite score representing both tests could not be created and used for analysis. The strong intercorrelations within the instruments (Cronbach's estimate of subtest uniformity for the semantic differential was .74; for the economic literacy test .76) however, suggest that two simple total scores are both acceptable and function as more immediately intuitive units of analysis.

Figure 4 provides the total pre and posttest scores for the attitude measure for the four groups. Figure 5 includes the pre and posttest scores for the economic knowledge of these same four groups. As may be seen, the only statistically significant gains are for the summer college students, in the area of economic knowledge. The management trainees show a strong negative trend in terms of their scores on the attitude test. This trend is even more revealing when the fact that there were only four individuals in this group is considered. It is believed that if this group had been larger, the negative decline in attitude would have been statistically significant. These results, as well as the lack of statistical significance for the other sections, are discussed further in the interpretation section of this article.

In viewing the pre-test differences between groups, it may be seen that the college interns show a significantly lower attitude score than the base line Raytheon employees. This is true both for the concept words "capitalism" and "profit-making corporations," as well as for the overall total attitude score. This same group of college interns is also significantly lower than both the base line employees and the management trainees in the total economic literacy (knowledge) test, and within the multiple choice subsection of this test.

FIGURE 4

SEMANTIC DIFFERENTIAL (ATTITUDE) MEASURES
PRE AND POSTTEST SCORES BY GROUP

Group	Free Enterprise Concept		Capitalism Concept		Profit-Making Corp. Concept		Private Bus/Ind Concept		Total Scores	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Teachers	34.25	83.33	78.50	81.83	32.62	80.67	83.50	82.33	328.87	328.67
Management Trainees	85.75	79.75	79.25	73.25	80.25	78.75	82.75	74.75	328.00	306.50
Regular-Raytheon Employees	87.50	X	84.08	X	85.00	X	84.58	X	341.17	X
College Summer Interns	77.63	75.62	69.68	67.37	72.16	72.94	76.37	75.47	295.84	291.37

FIGURE 5

ECONOMIC LITERACY (KNOWLEDGE) MEASURES
PRE AND POSTTEST SCORES BY GROUPS

Group	True-False		Multiple Choice		Total	
	Pre	Post	Pre	Post	Pre	Post
Teachers	8.75	8.50	13.12	15.67	21.87	24.17
Management Trainees	10.75	11.75	17.75	17.75	28.50	29.50
Regular Raytheon Emp.	10.17	X	16.75	X	26.92	X
College Summer Interns	7.79	9.50	12.37	14.75	20.16	24.25

In reviewing the posttest data, this same group of college students remain significantly below the base line employees in general attitude, as well as for the particular word "capitalism."

The next question that can be raised from the data is whether there were any significant gains or losses for any particular group from the pre to the post tests. As indicated earlier, the management trainees approached negative gains in attitude, although statistical significance was not reached due to the small size of the group. Positive pre-posttest gains were shown for the college students, in their economic knowledge test scores, both for the test as a whole and for both the true-false and multiple choice parts of the test separately.

In addition to the test scores, data were gathered from all participants in terms of their age, degrees, years of experience in industry, in teaching, etc. These variables were analyzed to determine whether correlations existed between any of these variables and the total group scores. As might be expected, a strong correlation existed between the age and group variables. By the very nature of these four groups, age is not uniformly distributed. The college students are the youngest group, followed by the management trainees, the teachers, and the Raytheon employees. Thus,

individual groups tend to fall into one age category (x^2=44.59 with 12 d.f.; p .0001).

This gave rise to the question of whether group differences on dependent variables were really age differences. To respond to this question, analyses of group differences were performed after the dependent variables had been adjusted for age. The results showed that group differences previously found in the semantic differential (attitude) for both the individual subtest scores and for the total scores disappeared when first covaried for age.

The economic literacy test did show different results. For this test both age and group have significant and independent effects.

Interpretations

The initial review of these results may appear disappointing in terms of seeking positive attitudinal changes by the teacher participants. In actuality, there were only minimal changes in the attitudes and knowledge among these groups, as shown by these tests. There were, however, a number of other considerations and program effects not measured by these instruments.

The tests did not measure attitude or knowledge about working at Raytheon. Neither were attitudes about education, career education, or the concept of building bridges between

business, industry, and education assessed. A number of unsolicited written accolades about the program were received from participants in all categories. Furthermore, the participants are enrolled in a continuing graduate program and are enthusiastically engaged in the process of designing programs for their school system that will help students with their transition from school to work.

Another very interesting result from this data revealed that teachers (at least the teachers involved in this program) do not have the negative attitude about business and industry that is often perceived by the business world. In fact, the teachers had the second highest group score, only below that of the Raytheon employees.

The question may be raised as to why the attitude scores of the management trainees declined. Many factors may be responsible. One consideration, however, is that the trainees had just completed their undergraduate studies and this was their first venture in the "world of work." As such, they too were in the process of coping with the disparities between the ideals of the classroom and the realities of the corporate boardroom. In any event, this issue, among others, is worthy of further investigation.

As a whole, the results of the project are thus far encouraging. A number of Raytheon employees have indicated

interest in assisting with further developments of the program. In fact, several have voluntarily chosen to participate in the ongoing graduate program to further these efforts.

Future Plans

From this pilot effort, Raytheon Data Systems is extending an invitation to a number of selected school systems in its surrounding geographic area to join in a long-term relationship that will foster the goals of this project. These goals are as follows:

1. To establish and maintain permanent, ongoing relationships with school systems in the surrounding communities.

2. To examine the continuing appropriate roles of business, industry, and school personnel regarding the preparation of youth for work.

3. To train a cadre of educational and industrial personnel from each school system and from RDS in designing and implementing programs that will foster positive school-business-community cooperation.

4. To design specific programs that may be implemented in schools and at RDS.

5. To continue to provide summer employment for teachers in industry that will broaden their experiential base and help them prepare youth for work.

6. To use these school systems as the pool for high

school students that will work for RDS in a cooperative education part-time employee program.

7. To use this program to identify alumni of these school systems to participate in college intern and management trainee programs.

8. To provide teachers with the background, skills, and commitment to integrate components of career education in their classrooms.

Each participating school system, as evidence of its commitment, must identify a pool of individuals to serve as a team in this effort. This team will be comprised of at least one top level management person within the school system; the individual responsible for career education; at least one high school, junior high school, and elementary school teacher; at least one guidance counselor; and one special needs teacher. The team will participate in the continuing activities of the program, and work with sponsors identified within the Raytheon Data Systems Company.

A symposium is currently being planned for the Spring, 1978 semester in which individuals engaged in school-business-industry-community collaborative efforts throughout the United States will be invited to come and speak to this group, other teachers, school administrators, industrialists and businessmen. The program is planned to continue in a

refined phase for the Summer of 1978, and some involvement of high school students is anticipated. And, it should be mentioned that in the process of collaboration the teachers were able to bring their expertise in the areas of training, curriculum development, evaluation, and human relations training to the industrial relations and training departments of the Raytheon Data Systems Company.

This article provides the need, rationale, and a sample program for bringing various facets of society together for the optimal development of our human resources, and for the development of expanded personnel and organizational development models. It provides, too, an example of how a School of Education of a large University and a rapidly growing high technology company can work together to build the bridges from classrooms to corporate boardrooms.

FOOTNOTES

1. Livingston, J. Sterling. "Myth of the Well-Educated Manager," Harvard Business Review, January-February, 1971.

2. Figure 1 developed by Raytheon Data Systems Company and reprinted with their permission.

3. Brenner, Steven N. and Molander, Earl A. "Is the Ethics of Business Changing?" Harvard Business Review, January-February, 1977.

4. Glasser, William. The Identity Society. New York: Harper & Row, Publishers, 1972.

5. Hoyt, Kenneth B. Career Education: What It Is and How To Do It. Salt Lake City, Utah: Olympus Publishing Company, 1974.

6. This application of the semantic differential was developed by the author and is based upon the research of Osgood et.al. found in Osgood, C.E., Suci, G.J., and Tannenbaum, P.H. The Measurement of Meaning. University of Illinois Press, Urbana, Illinois, 1957.

APPENDIX A

RESEARCH INSTRUMENTS

This Appendix provides copies of the attitude and knowledge scales administered to the participants at the beginning and end of the summer project. The attitude scale is an application of the semantic differential initially developed by Osgood, et.al. This particular application was developed by the project consultant and author of this report.

The knowledge scale was developed by two professors of economics at Purdue University, as indicated on the instrument. It was provided by, and used with the permission of, J. Fred McLimore, Associate Dean of External Affairs, Krannert Graduate School of Management, Purdue University.

ECONOMIC LITERACY PROJECT

INSTRUCTIONS

The scale on this page and on the following pages is designed to measure your attitude, or how you feel about the four words, or concepts of free enterprise, capitalism, profit-making corporations, and private business and industry. Place an X in the parenthesis ( ) that most closely expresses how you feel about the word or phrase listed, when placed along the pairs of words shown. Each concept is followed by 15 pairs of words.

Since this is an expression of feelings, there are no right or wrong responses. Each response simply indicates your point of view.

Only group responses will be presented. The anonymity of all individuals responding will be protected. Your name is requested only for the purpose of matching responses over time. After responses are matched, the sheet that contains your identity will be separated from the sheets containing your responses.

Thank you very much for your cooperation.

FREE ENTERPRISE

good ( ) ( ) ( ) ( ) ( ) ( ) ( ) bad

ugly ( ) ( ) ( ) ( ) ( ) ( ) ( ) beautiful

unimportant ( ) ( ) ( ) ( ) ( ) ( ) ( ) important

hard ( ) ( ) ( ) ( ) ( ) ( ) ( ) soft

strong ( ) ( ) ( ) ( ) ( ) ( ) ( ) weak

feminine ( ) ( ) ( ) ( ) ( ) ( ) ( ) masculine

active ( ) ( ) ( ) ( ) ( ) ( ) ( ) passive

slow ( ) ( ) ( ) ( ) ( ) ( ) ( ) fast

worthless ( ) ( ) ( ) ( ) ( ) ( ) ( ) valuable

relevant ( ) ( ) ( ) ( ) ( ) ( ) ( ) irrelevant

irresponsible ( ) ( ) ( ) ( ) ( ) ( ) ( ) responsible

necessary ( ) ( ) ( ) ( ) ( ) ( ) ( ) useless

authoritarian ( ) ( ) ( ) ( ) ( ) ( ) ( ) democratic

permissive ( ) ( ) ( ) ( ) ( ) ( ) ( ) restrictive

approach ( ) ( ) ( ) ( ) ( ) ( ) ( ) avoid

ECONOMIC LITERACY PROJECT

CAPITALISM

good	( )	( )	( )	( )	( )	( )	( )	bad
ugly	( )	( )	( )	( )	( )	( )	( )	beautiful
unimportant	( )	( )	( )	( )	( )	( )	( )	important
hard	( )	( )	( )	( )	( )	( )	( )	soft
strong	( )	( )	( )	( )	( )	( )	( )	weak
feminine	( )	( )	( )	( )	( )	( )	( )	masculine
active	( )	( )	( )	( )	( )	( )	( )	passive
slow	( )	( )	( )	( )	( )	( )	( )	fast
worthless	( )	( )	( )	( )	( )	( )	( )	valuable
relevant	( )	( )	( )	( )	( )	( )	( )	irrelevant
irresponsible	( )	( )	( )	( )	( )	( )	( )	responsible
necessary	( )	( )	( )	( )	( )	( )	( )	useless
authoritarian	( )	( )	( )	( )	( )	( )	( )	democratic
permissive	( )	( )	( )	( )	( )	( )	( )	restrictive
approach	( )	( )	( )	( )	( )	( )	( )	avoid

ECONOMIC LITERACY PROJECT

PROFIT - MAKING CORPORATIONS

good	( )	( )	( )	( )	( )	( )	( )	bad
ugly	( )	( )	( )	( )	( )	( )	( )	beautiful
unimportant	( )	( )	( )	( )	( )	( )	( )	important
hard	( )	( )	( )	( )	( )	( )	( )	soft
strong	( )	( )	( )	( )	( )	( )	( )	weak
feminine	( )	( )	( )	( )	( )	( )	( )	masculine
active	( )	( )	( )	( )	( )	( )	( )	passive
slow	( )	( )	( )	( )	( )	( )	( )	fast
worthless	( )	( )	( )	( )	( )	( )	( )	valuable
relevant	( )	( )	( )	( )	( )	( )	( )	irrelevant
irresponsible	( )	( )	( )	( )	( )	( )	( )	responsible
necessary	( )	( )	( )	( )	( )	( )	( )	useless
authoritarian	( )	( )	( )	( )	( )	( )	( )	democratic
permissive	( )	( )	( )	( )	( )	( )	( )	restrictive
approach	( )	( )	( )	( )	( )	( )	( )	avoid

ECONOMIC LITERACY PROJECT

PRIVATE BUSINESS AND INDUSTRY

good ( ) ( ) ( ) ( ) ( ) ( ) ( ) bad

ugly ( ) ( ) ( ) ( ) ( ) ( ) ( ) beautiful

unimportant ( ) ( ) ( ) ( ) ( ) ( ) ( ) important

hard ( ) ( ) ( ) ( ) ( ) ( ) ( ) soft

strong ( ) ( ) ( ) ( ) ( ) ( ) ( ) weak

feminine ( ) ( ) ( ) ( ) ( ) ( ) ( ) masculine

active ( ) ( ) ( ) ( ) ( ) ( ) ( ) passive

slow ( ) ( ) ( ) ( ) ( ) ( ) ( ) fast

worthless ( ) ( ) ( ) ( ) ( ) ( ) ( ) valuable

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irresponsible ( ) ( ) ( ) ( ) ( ) ( ) ( ) responsible

necessary ( ) ( ) ( ) ( ) ( ) ( ) ( ) useless

authoritarian ( ) ( ) ( ) ( ) ( ) ( ) ( ) democratic

permissive ( ) ( ) ( ) ( ) ( ) ( ) ( ) restrictive

approach ( ) ( ) ( ) ( ) ( ) ( ) ( ) avoid

Literacy Test (Economics Dep't.)

by Robert V. Horton and Dennis J. Weidenaar

There's a story circulating about the down-and-out economist panhandling on the street, sidling up to people saying, "Hey, buddy, buy me a beer and I'll tell you what GNP means."

Unfortunately for our friend, most people these days have attained a certain level of economic sophistication, including business men and women. Business publications feature articles by leading economists—fraught with references to bottoming out, market economy, M_1 and M_2, input/output, and the Phillips curve—which presume an understanding on the part of the reader. But how realistic is this assumption? How literate—economically—are business people?

Across the Board offers you the following opportunity to test your savvy. A score of 10 or more correct answers on the first test, and 16 or more on the second means you get to keep on reading those articles. If you score under 10 and 16, maybe you'd better hold on to your corporate economist.

Part I—Answer True or False.

	True	False
1. What anyone gains in an economic transaction, someone else loses.	☐	☐
2. Tariffs are of benefit to most Americans, although at the expense of some of them.	☐	☐
3. Zero population growth means zero economic growth.	☐	☐
4. If each of us had more money, we'd each be better off.	☐	☐
5. If we were to reach an understanding with the Soviet Union and achieve complete disarmament, our economy would collapse into a deep depression with mass unemployment.	☐	☐
6. Substitution of machines for workers must result in fewer jobs for Americans.	☐	☐
7. Government has no appropriate function in a free enterprise system.	☐	☐
8. The only effect of taxes is to furnish revenues to the government.	☐	☐
9. Economic goods have value only because of the labor costs required for their production.	☐	☐
10. When a market economy is behaving properly, business losses serve no purpose.	☐	☐
11. Labor unions are the primary source of the high standard of living of American workers.	☐	☐
12. "But more and better capital equipment for American industry isn't like buggy whips or fertilizer for example we can't have too much of it."	☐	☐

Profs. Horton and Weidenaar are faculty members in economics education at the Krannert Graduate School of Management, Purdue University. *They acknowledge tacit assistance from the Joint Council on Economic Education.*

Part II—Multiple choice. Circle the best response.

1. If the government were to levy a tax of one dollar on every pair of shoes sold, which of the following would most likely result?

(A) Consumers would pay a higher price for shoes and probably buy a smaller quantity.

(B) Suppliers would increase the quantity sold in order to offset the taxes paid to the government.

(C) Consumers would pay a higher price and as a result suppliers would make larger profits.

(D) Suppliers would sell more and charge a higher price.

---

2. If the available supply of a commodity increases at the same time the demand for it falls, in the absence of counteracting forces its price will:

(A) Rise *(C) Stay the same*

(B) Fall *(D) Be indeterminate*

---

3. The long lines of consumers waiting outside many stores in Russia tell us that many consumer goods there are probably:

(A) Priced too low *(C) Not in demand*

(B) In great supply *(D) Priced too high*

---

4. In a market economy, what is it that determines how many workers and how many machines are employed in one industry vs. another industry?

(A) Social custom

(B) The ways people spend their incomes

(C) The exchange value of money

(D) The needs or preferences of the managerial class

---

5. The price system in a market economy reacts to a shortage of a commodity by:

(A) Raising the price and producer profits

(B) Lowering the price and producer profits

(C) Raising the price, but lowering producer profits

(D) Lowering the price, but increasing producer profits

---

6. Which one of the following events would tend to reduce consumer spending?

(A) A reduction in social income taxes

(B) A decline in consumer incomes

(C) A rise in business investment

(D) Increased government payments to individuals

7. During a time of full employment, if we wanted to slow down rising prices during the next year or so, we would want the government to

(A) Raise taxes

(B) Stimulate the investment by business in more efficient machinery

(C) Increase loans to promising college students

(D) Increase governmental spending

---

8. Changes in workers' real wages (the purchasing power of their money wages) can be calculated by comparing the changes in money wages with the changes in the:

(A) Cost of living

(B) Rate of profits of business

(C) Total national wealth

(D) Volume of credit and currency

---

9. If the amount of money circulating in the U.S. is greatly increased, at a time when there is full employment, what would be most likely to happen?

(A) The prices of many goods and services would rise.

(B) We would all be better off because we could buy more.

(C) The interest rates on loans would immediately increase.

(D) Business would immediately try to slow down production.

---

10. Over the long run, which would be the one best way of increasing the amount of goods and services the nation can produce?

(A) Raise everyone's income so that we all have more money to spend.

(B) Have the government take over the factories.

(C) Pass laws to prevent workers from going on strike.

(D) Provide better machinery and more education for workers.

---

11. Economists often disagree in their suggested "solutions" to social problems. The disagreements arise mostly because

(A) Economics is not a science.

(B) Economists cannot conduct laboratory experiments as readily as physicists and chemists.

(C) Ethical value judgments as well as economics are involved.

(D) Some economists have better judgment than others.

12. "Americans are a mixed-up people with no sense of ethical values. Everyone knows that baseball is far less necessary than food and steel, yet they pay ball players a lot more than farmers and steelworkers." Why?

(A) Ball players are really entertainers rather than producers.

(B) Ball players are more skilled than persons who get less pay.

(C) Excellent baseball players are scarcer relative to the demand for their services.

(D) There are fewer professional ball players than farmers or steelworkers.

---

13. High wages in the United States are based on the high productivity of U.S. labor. All of the following contribute to this high productivity except:

(A) The skill and work habits of U.S. labor

(B) Our accumulation of a large stock of capital goods

(C) Our technological and managerial advances

(D) Tariff protection from competition of low-paid foreign workers

---

14. Corporation profits should be viewed in relationship to:

(A) Sales and revenues *(C) Total capital*

(B) Stockholders' equity *(D) All of these*

---

15. In a basically private enterprise economy, which tax is likely to alter most the pattern of consumer choice among alternative products?

(A) A general sales tax

(B) A personal income tax

(C) An excise tax on particular products

(D) A tax on business profits

---

16. If a high tariff were placed on crude oil shipped into the United States:

(A) The price of crude oil and its product, gasoline, would go down in the United States.

(B) Foreigners would buy more goods from the U.S.

(C) Presently known American reserves of crude oil in the ground would last longer.

(D) The price of crude oil and its product, gasoline, would go up.

---

17. Specialized production and exchanges within a nation or between nations of the specialized goods produced tend to have which of the following effects?

(A) A larger total quantity of wanted goods and services can be produced.

(B) The independence of both nations and individuals is increased.

(C) The danger of economic instability is reduced.

(D) All costs of production will rise, but not proportionately.

---

18. Use of a price system for rationing economic goods is a distinguishing characteristic of the economy of which of the following?

(A) U.S. *(C) Russia*

(B) England *(D) More than one of the above*

---

19. Governmental action could not increase economic efficiency:

(A) By taxation of "external diseconomies," such as air pollution by individual motorists

(B) By subsidization of "external economies," such as employee upgrading by large industrial companies

(C) By protection of American workers against the dumping of VWs here at lower prices than are charged in Germany

(D) By provision of a larger army

---

20. A market economy may be functioning as it should:

(A) When some business firms are making exceptionally high profits

(B) When some product prices are falling drastically

(C) Both A and B

(D) Neither A nor B

ANSWERS

Part I—1: A; 2: B; 3: A; 4: B; 5: A; 6: B; 7: A; 8: A; 9: A; 10: D; 11: C; 12: C; 13: D; 14: D; 15: C; 16: D; 17: A; 18: D; 19: C; 20: C.

Part I All questions are answered. False

APPENDIX B

FALL 1977 COURSE SYLLABUS

This Appendix contains a copy of the syllabus used for the course taught during the Fall, 1977 semester. The course was entitled BC 507: School-Business-Community Cooperation, offered by Harold S. Resnick in his role as an associate professor within the Department of Business and Career Education at Boston University. The course offered four semester hours of graduate credit to the participants, through the graduate extension offerings of the School of Education, Boston University.

Although this course number and title are an integral part of the graduate program of the Department of Business and Career Education, this particular syllabus provided a unique application of the course and participation was limited to those individuals from the school systems and within Raytheon already engaged in this project through the summer internship component.

Department of Business and
Career Education
Dr. Harold S. Resnick

Fall, 1977 Semester
Thursdays, 4:00-6:45 p.m.

BC 507 - SCHOOL, BUSINESS, COMMUNITY COOPERATION

Course Description: Utilizing community resource personnel for in-school and out-of-school groups. Planning on-the-job experiences for students. Modern trends in school-community cooperation.

Course Format: This course is part of the cooperative program between The Raytheon Data Systems Company, Boston University, and several school districts in surrounding communities. The purpose of this project is to increase the awareness and appreciation of teachers about American industry; and to increase the awareness and appreciation of employees about public education. The goal of this exchange is the development and implementation of programs in the school systems that will help prepare students to be both desirous and capable of functioning in and contributing to American society.

Since the students in this course will be comprised of teachers, management trainees, and employees, a diverse approach will be taken regarding a broad range of topics. The purpose of this approach is to foster interaction and class participation reflective of the different views and orientations of the group. It is hoped that, from this interaction, a common theme and agreement will be reached regarding the nature and extent of school-business-community interaction, and plans developed to implement several models in the various school systems represented.

To present the most diverse and knowledgeable data base for decision-making, a variety of guest speakers will be used. Each guest speaker has been selected because of his/her particular and unique experiences and knowledge related to the topic. Each session will stress a different aspect of recurring themes, as well as develop new ones. The professor will attempt to weave these threads into a comprehensive strand forming a base for action.

Session by Session Plan

Session One - September 8, 1977 - Course Introduction. Review of the goals and organizational structure of the course. Discussion of the current concepts of vocational, occupational, and career education. Formulation of interdisciplinary teams for course project development.

Session Two - September 15, 1977 - Curriculum: Its Design and Influences. The guest speaker for this session will be Dr. Robert Gower. Dr. Gower is a professor of Curriculum at Boston University and has just published a new book entitled, Five Essential Dimensions of Curriculum Design. He also coordinates Boston University's desegregation program with the Boston Public Schools. Dr. Gower will explore various facets of curriculum and the influences that business, industry, and the community do and can have upon the schools.

Session Three - September 22, 1977 - Jewish Holiday Yom Kippur Class will not meet.

Session Four - September 29, 1977 - The Role of Advisory Committees and Community Action Groups in Vocational and Career Education. The guest speaker for this session will be Mr. Jack Rogers. Mr. Rogers has been a consultant for career and vocational education for many years, and has served for several Associate Commissioners in the Mass. State Department of Education. He provided the major leadership in the development of the Boston Unified Plan for Vocational Education, and works with many community groups and advisory councils in its implementation.

Session Five - October 6, 1977 - The Moral Responsibilities of Industry and Business Regarding Public Education. The guest speaker for this session will be Mr. J. Thomas Markley. Mr. Markley is the president of the Raytheon Data Systems Company, and sponsor of this program. He will address the crucial role, responsibility, and opportunities for industry in educating America's youth.

Session Six - October 13, 1977 - Strategies for Involving Business and Industry in the Educational Process. The guest speaker will be Dr. Fred J. McLimore. Dr. McLimore is the Dean of External Affairs for the Krannert Graduate School of Management, Purdue University. He has spent considerable time developing his program "Boardrooms to Classrooms" and is also a major sponsor of this project. Dr. McLimore will provide specific strategies and approaches used to elicit the support of large industrial organizations for public educational and training programs.

Session Seven - October 20, 1977 - Internships: An Opportunity to Prepare Students for Work, Using the World of Work. The guest speaker for this session is Mrs. Joely Cowan. Mrs. Cowan is a professor at Quincy Junior College, where she coordinates the internship program for business education students. At present, she is on leave while serving as the associate director of Project Hire at Boston University. Mrs. Cowan will address a variety of programs that place students in business and industry while they are still enrolled in school, discussing the major advantages and pitfalls of such programs to both the schools and the sponsoring agencies.

Session Eight - October 27, 1977 - Expectancy Theory and Its Impact on Community Organizations. The guest speaker will be Dr. David C. Gardner. Dr. Gardner is the chairman of the Department of Business and Career Education at Boston University, and has worked as a marketing director in industry for fifteen years prior to his career in education. He will discuss the relationships between effective programming of community activities with the expectations of the individuals involved regarding the outcomes of these activities. The presentation will provide both the theoretical and research base, combined with practical plans for implementation.

Session Nine - November 3, 1977 - Institutional Constraints Impacting Upon Cooperative Ventures, and Strategies for Resolving Them. The guest speaker will be Dr. Paul Warren, the associate dean for research and development, School of Education, Boston University. Dr. Warren coordinates all funded projects in the School of Education, and has arranged many cooperative ventures. He will report the various constraintsthat inhibit the success of these projects, and [illegible]ans of overcoming them. These insights are described [illegible] in his recent text, The Dynamics of Funding.

Session Ten - November 10, 1977 - Providing Joint Programs for Persons With Special Needs. The guest speaker will be Dr. William Wolk. Dr. Wolk is the Director of the South Shore Rehabilitation Center, and has major responsibility for designing and implementing vocational programs for persons with special needs. These programs make extensive use of a wide array of community resources. Dr. Wolk will describe these programs, and discuss their advantages, limitations, and [illegible]egal constraints.

Session Eleven - November 17, 1977 - Cooperative Programs in a Suburban School System. The guest speaker will be Dr. Guy A. Tardanico, curently serving as the administrator of career and occupational education for the Stoughton Public Schools. Dr. Tardanico will describe the array of student needs that exist at the junior and senior high school levels, and the variety of programs that may be implemented to meet these needs.

Session Twelve - November 24, 1977 - Thanksgiving Day Classes will not meet.

Session Thirteen - December 1, 1977 - Cooperative Programs in a Regional Vocational-Technical School District. The guest speaker will be Dr. Clifford Easton, Director of Planning and Evaluation for the Minuteman Regional Vo-Tech School District, Lexington, Mass. Dr. Easton will describe the particular needs of vocational-technical students, as compared with students in comprehensive school systems. Programs established both for these students and for others served by the community will be described. The varied roles and involvement of the business, industrial, and community sectors will be studied.

Session Fourteen - December 8, 1977 - Synthesis and Work Session This session will be used to synthesize the results of all previous sessions. Interdisciplinary teams will then be formed for each school system to finalize its plans for some activity to be implemented during the next semester.

Session Fifteen - December 15, 1977 - Student Presentations and Course Evaluation. Each team will present its planned program for review. Course wrap-up and evaluation.

Required Readings

1. Green, Thomas F. Work, Leisure, and the American Schools. New York: Random House, 1968. This paperback book presents a philosophical perspective of the concepts of work, working, occupational expectations, labor, and leisure. The impact of these concepts on schools and schooling from both an historical and current perspective is explored.

2. Burt, Samuel M. Career Education: Involving the Community and Its Resources. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1973. This brief document describes specific activities and strategies that school administrators and career educators may employ to involve the community in career education activities.

3. Reinhart, Bruce A., and Robert J. Weishan. Organizing for Community Involvement. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1975. This document provides step-by-step guidelines for planning and implementing community-based career education programs. It is fairly well detailed with many sample models and other examples.

4. Price, Charlton R., Scheele, Adele M., and Scheele, Sam D. American Business and School-Based Career Education. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1975. This document reviews career education from the perspective of business and industry, and provides a construct and examples of how the authors believe these issues should be taught in the schools.

5. Marlow, Frank M. Putting Citizen Advisory Committees to Work in Your School. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969. This book is part of a school administration series and is a most valuable guide and reference for establishing and implementing citizen advisory committees. The Function, organization, and utilization of these committees is clearly explained, with excellent examples and specimens in the appendixes.